Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-24 (Canceled).

25. (New) A method for measuring surface topologies with microscopic resolution comprising the following steps:

displacing a measuring sensor and a specimen in relation to each other, in x-y directions;

controlling the displacement of the specimen and sensor via a controller recording the x-y values of said sensor wherein the displacement control is initiated via software instruction to start the displacement movement;

reading said sensor at defined intervals after said sensor and displacement movement have been started;

tapping position transmitting trigger pulses in discrete and constant local intervals from the displacing element for position-related readout of said sensor;

combining a set of individual detected profiles which are locally offset from each other in a dimension extending perpendicular to the direction of the detected profiles wherein these profiles are combined to form a measured area after the measurement has been completed;

generating derived position related signals from basic signals via electronic data processing, wherein said derived position related signals are for triggering the recording of a set of measured values of the sensor;

storing said set of measured values; and

asynchronously transmitting said set of measured values to said controller.

26. (New) A device for carrying out the method as in claim 25, comprising:

a) an interval sensor arranged above a surface of the specimen;

b) a specimen carrier for carrying the specimen wherein said sensor and said specimen carrier are displacable elements which are displacable relative to each other;

c) a motor drive for displacing said interval sensor and said specimen carrier in a x-y direction;

d) a displacement control in communication with said motor drive for controlling the displacement movement;

e) a controller wherein said controller is connected with said interval sensor for recording the measured values of said interval sensor;

f) a position transmitter coupled to at least one of said displacable elements and in communication with said displacement control, for recording the position-giving trigger impulses,

wherein said displacement control is for converting signals from said position transmitter; and

g) an interface connected downstream of said displacement control for converting said signals from said displacement control into position-related, derived trigger signals for triggering the recording of values measured by said sensor, wherein said interface has a memory and a programming logic, wherein direction dependent local increments are added up in said memory, and a detection of direction takes place via said programming logic.

27. (New) The device as in claim 26, wherein said specimen carrier is in the form of a table that is displacable in the x-y direction.

28. (New) The device as in claim 26, wherein said sensor is displacable in the x-y direction.

29. (New) The device as in claim 26, further comprising an incremental angle encoder mounted on an axle of said motor, with

a direction of said incremental angle encoder coinciding with a direction of displacement of said measuring profile, wherein said incremental angle encoder is for tapping position transmitting trigger pulses on said displacable elements.

30. (New) The device as in claim 26, further comprising an incremental measuring position transmitter for tapping the position transmitting trigger pulses on said displacable elements.

31. (New) The device as in claim 30, wherein said position transmitter is a glass scale which is used to balance out positioning inaccuracies.

32. (New) The device as in claim 26, wherein said interface, for deriving a set of basic signals, comprises a programmable and storing microcontroller.

33. (New) The device as in claim 26, wherein said displacable control further comprises a programmable and storing microcontroller.

34. (New) The device as in claim 26, wherein said controller is a personal computer (pc).

35. (New) The device as in claim 26, wherein said sensor is an optically operated sensor.

36. (New) The device as in claim 35, wherein said sensor is a laser spot sensor.

37. (New) A device for measuring surface topologies of a specimen with microscopic resolution, the device comprising:

a) a sensor arranged above a surface of the specimen;

b) a specimen carrier for carrying the specimen wherein said sensor and said specimen carrier are displacable elements which are displacable relative to each other;

c) a motor drive for displacing said sensor and said specimen carrier in a x-y direction;

d) an incremental angle encoder coupled to said motor drive;

e) a displacement control in communication with said motor drive for controlling the displacement movement;

f) a controller whercin said controller is connected with said sensor for recording the measured values of said sensor;

g) a position transmitter coupled to at least one of said displacable elements and in communication with said displacement control, for recording the position-giving trigger impulses, wherein said displacement control is for converting signals from said position transmitter; and

h) an interface connected downstream of said displacement control for converting said signals from said displacement control into position-related, derived trigger signals for triqqering the recording of values measured by said sensor, wherein said interface has a memory and a programming logic, wherein direction dependent local increments are added up in said

memory, and a detection of direction takes place via said programming logic;

wherein the device is used to perform the following steps:

displacing said sensor and said specimen in relation to each other, in x-y directions;

controlling the displacement of said specimen and said sensor via said controller and said displacement control and recording the x-y values of said sensor wherein displacement control is initiated via software instruction from said controller to start the displacement movement;

reading said sensor at defined intervals after said sensor and displacement movement have been started;

tapping position transmitting trigger pulses in discrete and constant local intervals from said sensor by using said incremental angle encoder for position-related readout of said sensor;

combining in said interface a set of individual detected profiles which are locally offset from each other in a dimension extending perpendicular to the direction of the detected profiles wherein these profiles are combined to form a measured area after the measurement has been completed;

generating in said interface derived position related signals from basic signals via electronic data processing, wherein said derived position related signals are for triggering the recording of a set of measured values of said sensor;

storing said set of measured values; and

asynchronously transmitting said set of measured values to said controller.